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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,020	04/18/2001	Yasushi Kohno	TKA0028	7531

7590 10/09/2003

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EXAMINER	
VALENTI, ANDREA M	

ART UNIT	PAPER NUMBER
3643	

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	09/837,020	KOHNO ET AL.	
	Examiner	Art Unit	
	Andrea M. Valenti	3643	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 23 September 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2.☐ The proposed amendment(s) will not be entered because:

(a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

(b) ☐ they raise the issue of new matter (see Note below);

(c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3.☐ Applicant's reply has overcome the following rejection(s): _____.

4.☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5.☐ The a)☐ affidavit, b)☐ exhibit, or c)☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

6.☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7.☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: *1-13*.

Claim(s) withdrawn from consideration: _____.

8.☐ The proposed drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9.☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10.☐ Other: _____

Please see appended explanation.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al in view of *Population Viability Analysis for the Oyster Plant (Mertensia maritime) in the Oslofjord Region* by Skarpaas.

Regarding Claim 1, Kohno et al teaches a method of encapsulating at least one plant seed in an aqueous gel capsule (Kohno Col. 1 line 10-20); refrigerating the plant seeds under the condition that the plant seeds do not germinate (Kohno Col. 4 line 39); and sowing the plant seeds (Kohno Col. 1 line 21-25 and Col. 3 line 27-36). Kohno does teach that the seeds are subjected to cold temperatures. Kohno et al does not explicitly state that the method prevents defective germination or growth of a plant. However, it is notoriously old and well-known in the art of plant husbandry that cold breaks seed dormancy and provides for a more uniform and enhanced germination. Skarpaas reference is cited merely to illustrate accepted wisdom in the field. The Skarpass reference is cited solely to teach that a cold period is necessary to break seed dormancy and that prolonged cold treatment enhances germination (Skarpaas abstract second sentence of second paragraph). Therefore, it would have been obvious to one of ordinary skill in the art to modify the storage duration under cold temperatures

through routine tests and experimentation to a length that enhances germination as taught by Skarpaas.

Regarding Claim 13, Kohno as modified inherently teaches refrigerating the encapsulated plant seed at a temperature of about 15°C or lower (Col. 3 lines 28-36) and for a sufficient period of time to improve the germination of the encapsulated plant seed as compared to non-refrigerated encapsulated plant seeds.

Regarding Claim 2, Kohno as modified does not explicitly identify the plant seed size. However, it would have been obvious to one of ordinary skill in the art to apply the teachings of Kohno to a seed equal to or less then 1 mm for the enhanced germination effects taught by Kohno et al since applicant provides no criticality in the specification for the size and it is old and notoriously well-known to coat tobacco seeds with a seed coat.

Regarding Claims 3 and 4, Kohno et al as modified is silent on the refrigeration being carried out in a dark place. However, it is old an well-known in the art of plant husbandry that seeds posse germination and dormancy characteristics dependent on their genetic nature and germination occurs under specific environmental conditions such as light requirements. Some seeds require light and some seeds require darkness to germinate. It would have been obvious to one of ordinary skill in the art to conduct the seed storage method of Kohno et al in a dark place since a radish seed is a light germinator and it is necessary to store the seed in a dark place to prevent early germination and to increase the success rate of the plant.

Regarding Claims 5 and 6, Kohno et al as modified teaches the plant seed is a seed of a light germinator (Kohno et al Col. 4 line 25).

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al as applied to claim 1 above, and further in view of U.S. Patent No. 5,525,131 to Asano.

Regarding Claims 7-12, Kohno et al as modified is silent that the plant seed encapsulated in an aqueous gel capsule is a pelletized seed. However, Asano teaches that it is old and well-known in the art of plant husbandry to pelletize a seed (Asano Col. 1 line 15-21). It would have been obvious to one of ordinary skill in the art to apply the gel coating of Kohno et al to the palletized seed of Asano for the mechanized and economical distribution of the seeds in the field (Asano Col. 1 lines 14-18).

Response to Arguments

Applicant's arguments filed 23 September 2003 have been fully considered but they are not persuasive.

Examiner maintains that a prima facie case of obviousness was established and that the teachings of the cited references are combinable.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does

not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The teachings presented by Kohno are applicable to many different seeds. The abstract, the specification, and the claims of Kohno all refer to seeds in a general sense. The radish seed is merely just one example of a seed that could receive the aqueous gel-coat. The teachings of Skarpass were included to illustrate accepted wisdom in the field that it is old and notoriously well-known in the art of plant husbandry that temperature has a direct effect on germination. Skarpass presents general knowledge in the field of seeds. The seed of Skarpass and the seeds of Kohno are merely alternate equivalent seeds. Although the seeds are alternate equivalents Skarpass was not a cited reference with regard to seed types but merely to illustrate the effect of temperature on seeds in general.

Skarpass teaches in the last paragraph of the abstract that seeds tend to germinate in warmer temperatures and it is a common characteristic of seeds not to germinate when subjected to cold temperatures. Skarpass also teaches that cold temperatures break seed dormancy to increase the probability of success.

Furthermore, Kohno teaches the same method steps as those outlined by applicant and will then inherently attain the same results since the method was conducted under the same conditions even though Kohno set out to solve a different problem. An objective of Kohno is to prevent the reduction in yield and handling (Kohno

Col. 1 line 55). Thus storage seed dormancy and germination are inherent concerns of Kohno thus providing the motivation and suggestion for the combination.

Examiner would like to bring applicant's attention to additional cited references that teach it is notoriously old and well-known in the art that cold breaks seed dormancy:

U.S. Patent No. 6,331,504 B1 teaches that germination is temperature and seed specific (Col. 1 lines 17-55);

Abstract [http://www.oikos.ekol.lu.se/Oikos.95.3.abstracts/11173skarpaas.htm] by Skarpaas, third sentence prolonged cold treatment enhanced germination;

Effect of Scarification, GA and chilling on the germination of goldenrain-tree (Koelreuteria paniculata Laxm.) seeds, Rehman, Kyungpook National University, South Africa, 16 December 1999, 6 pages, abstract third sentence;

The Angelgrove Tree Seed Company, Basic Guidelines & Tips for Germinating Seeds, 9 pages [http://trees-seeds.com/seed.html] page 2 first paragraph.

Examiner disagrees with applicant's argument that the pelletized seed would dissolve during preservation. Kohno teaches that the encapsulated seed is stored in a solution of metal ions (Kohno Col. 2 line 19-39 and abstract). The metal ion, also taught by Asano (Asano Col. 1 line 35-45), is a water proofing compound that would prevent the pelletized seed from dissolving prematurely in the preservation solution.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea M. Valenti whose telephone number is 703-305-

3010. The examiner can normally be reached on 7:30am-5pm M-F; Alternating Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 703-308-2574. The fax phone numbers for the organization where this application or proceeding is assigned are 703-306-4195 for regular communications and 703-305-0285 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-4357.

AMV
October 7, 2003